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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/775,386	01/31/2001	Michael D. DeGrandpre	UMT-101X	7823

7590

06/04/2004

Jean Kyle  
Saliwanchik, Lloyd & Saliwanchik, P.C.  
P.O. Box 2274  
Hamilton, MT 59840-4274

EXAMINER
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CROSS, LATOYA I

ART UNIT	PAPER NUMBER
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1743

DATE MAILED: 06/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/775,386

Applicant(s)

DEGRANDPRE, MICHAEL D.

Examiner

LaToya I. Cross

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-9, 12-21 and 24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9, 12-21 and 24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

This Office Action is in response to Applicant's amendments filed on March 1, 2004.

Claims 1-9, 12-21 and 24 are pending.

#### *Withdrawal of Rejections from Previous Office Action*

- The anticipatory rejection over DeGrandpre et al is withdrawn in view of Applicant's submission of a declaration under 37 CFR 1.132 stating that the current inventor was the sole inventor of the subject matter claimed. While there are co-authors named in the Analytical Chemistry journal article, the co-authors did not contribute to the conception of or the devising of the instantly claimed invention.

#### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5, 7 and 13-17 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 5,434,084 to Burgess, Jr.

Burgess teaches a device capable of continuously measuring the presence and concentration of an analyte in a sample. The device generally comprises a sensor probe, a reservoir, and detector. The sensor probe comprises a reaction chamber having an inflow opening, an outflow opening, a radiation source and a detection fiber. Reagent flows into the inflow opening, through the reaction chamber and out of the outflow opening. Analytes

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present in the sample diffuse into the reaction chamber and contacts the reagent flow, resulting in a reaction that modulates differently than unreacted reagent. Unreacted reagent is considered to be a blank. The detection means communicates with the detection fiber in the sensor probe and measures the intensity of electromagnetic radiation that is directed across a defined path in the sensor probe. See col. 2, line 40 – col. 3, line 6. Burgess teaches that the sensor probe is an optrode using optical fibers, which may be used with absorbance, fluorescence and colorimetric techniques. When absorption optrodes are used, the attenuation of the the probe beam is related to the sample concentration. When fluorescent optrodes are used, the intensity, frequency or another characteristic of the fluorescence emission is used to monitor sample concentration. For colorimetric determination, the measurement is a change in color upon reacting with an analyte (col. 5, lines 10-19; col. 6, lines 57-68; col. 11, lines 24-32). At col. 11, lines 44-53, a fluorescent reagent is used, as recited in claim 3. At col. 11, lines 54-68, a colorimetric reagent is taught, as recited in claim 2. With respect to the means for renewing the reagent, Burgess teaches using a pump and valve system to control the flow rate of reagent into the reaction chamber. This allows the reagent to be continuously renewed. With respect to the method of claim 13, the reference also teaches a stop flow mode whereby when the flow is stopped, the signal level at the point in time is related to the concentration of analyte. Then the pump can be turned on again and the signal will return to a base line, allowing the sensor probe to be "self-referencing". See col. 9, lines 28-49.

3. Claims 1, 2, 4-9, 12-14, 16-21 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Limnology and Oceanography, "In situ measurements of seawater pCO<sub>2</sub>" by DeGrandpre et al (hereinafter DeGrandpre et al I).

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DeGrandpre et al I teaches a device and method for determining seawater pCO<sub>2</sub>. The device comprises a colorimetric pH indicator contained in a gas permeable membrane, exposed directed to seawater. The pH indicator is pumped into a membrane equilibrator by a solenoid pump. Blank solutions are introduced through a 3-way solenoid valve. The pump and valve system allow the indicator solution to be periodically renewed (p. 969, 2<sup>nd</sup> col.). Once the indicator solution has equilibrated with the seawater, the equilibrated solution is pumped into a fiber optic flow cell, where light is measured at three wavelengths of the indicator. As an indicator for seawater pCO<sub>2</sub>, DeGrandpre et al I teach using bromothymol blue (p. 970, 1<sup>st</sup> col.). As a sensor, the reference teaches using the SAMI-CO<sub>2</sub>. See Figure 2. With respect to the method of taking absorbance based measurements, DeGrandpre et al teach that absorbances are taken at two wavelengths when a blank solution is drawn into the detection cell. The ratio of the absorbance for the equilibrated solution and the blank solution is determined by formulas (2) and (3) using the indicator absorbances and the transmitted light intensity.

### *Response to Arguments*

4. Applicant's arguments with respect to claims 1-9, 12-21 and 24 have been considered but are moot in view of the new ground(s) of rejection.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until

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after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LaToya I. Cross whose telephone number is 571-272-1256. The examiner can normally be reached on Monday-Friday 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Jill Warden  
Supervisory Patent Examiner  
Technology Center 1700